

**WASHINGTON DEPARTMENT OF ECOLOGY**  
**ENVIRONMENTAL ASSESSMENT PROGRAM**  
**FRESHWATER MONITORING UNIT**  
**STREAM DISCHARGE TECHNICAL NOTES**

**STATION ID:** 32B075  
**STATION NAME:** Touchet River at Cummins Road  
**WATER YEAR:** 2013  
**AUTHOR:** Mitch Wallace

**Introduction**

Watershed Description

The Touchet River is the largest tributary of the Walla Walla River in southeastern Washington. Its headwaters lie in the Blue Mountains above the town of Dayton in Columbia County. The main river is formed by the confluence of the North and South Forks.

Land use is primarily agricultural, consisting of dryland crops and irrigated farming in the lower portions.

Spring Chinook, steelhead, and bull trout are present within the watershed.

Gage Location

The gage is located on the left bank, directly upstream of the Cummins Road bridge crossing, one mile north of Touchet, Washington. It is located at river mile 3.0.

Table 1. Basin Area and Legal Description

Drainage Area (square miles)	780 (USGS)
Latitude (degrees, minutes, seconds)	46° 03' 24" N
Longitude (degrees, minutes, seconds)	118° 40' 03" W

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	218
Median Annual Discharge (cfs)	143
Maximum Daily Mean Discharge (cfs)	1120
Minimum Daily Mean Discharge (cfs)	1.7
Maximum Instantaneous Discharge (cfs)	1310
Minimum Instantaneous Discharge (cfs)	1.7
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	500
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	12
Number of Days Discharge is Greater Than Range of Ratings	0
Number of Days Discharge is Less Than Range of Ratings	31
Number of Un-Reported Days	0
Number of Days Qualified as Estimates	38
Number of Modeled Days	0

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

#### Table 2 Discussion (Discharge Statistics)

The estimated days were due to the mean daily flow difference between corrected and uncorrected data being greater than 20 percent and greater than 0.50 cfs.

Peak flow occurred on April 20, 2013. The lowest flow of the year was on August 8, 2013.

Table 3. Error Analysis Summary.

Potential Logger Drift Error (% of discharge)	5.2
Potential Weighted Rating Error (% of discharge)	13.7
Total Potential Error (% of discharge)	18.9

Table 3 Discussion (Error Analysis)

There were 91 days of stable drift. Stable drift occurs when the difference between the logger's recorded stages and manually observed gage heights remains steady and nearly equal over the course of two or more consecutive site visits.

Table 4. Stage Record Summary

Minimum Recorded Stage (feet)	1.28
Maximum Recorded Stage (feet)	7.20
Range of Recorded Stage (feet)	5.92

Table 4 Discussion (Stage Record)

At low flows the staff gage was dewatered. During these periods a secondary gage index (SGI) was used to determine stage. The SGI's at this site are a laser level reading and a tapedown reading from an established reference point on the bridge. In the case of the tapedown, a regression was developed to calculate the stage.

Table 5. Rating Table Summary

Rating Table No.	902	14	132
Period of Ratings	10/1/12 to 10/30/12	10/28/12 to 12/3/12	12/2/12 to 4/24/13
Range of Ratings (cfs)	1.28 to 5270	48 to 4930	29 to 5270
No. of Defining Measurements	21	4	18
Rating Error (%)	13.0	11.5	14.6

Rating Table No.	121	903	
Period of Ratings	4/19/13 to 9/17/13	7/9/13 to 9/30/13	
Range of Ratings (cfs)	3.0 to 5270	1.28 to 5270	
No. of Defining Measurements	17	21	
Rating Error (%)	14.1	13.0	

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Table 5 Discussion (Rating Tables)

Ratings 14 and 132 were caused by fall and winter precipitation events. Rating 121 was a result of seasonal run-off.

Eight flow measurements were taken throughout the water year, ranging from 18 to 792 cfs.

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	Slope Conveyance
Range of Modeled Stage (feet)	8.0 to 12.60
Range of Modeled Discharge (cfs)	1620 to 4930
Valid Period for Model	10/1/12 to 9/30/12
Model Confidence	3.4%

Table 6 Discussion (Modeled Data)

Modeled range does not extend to the highest recorded stage.
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Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date
n/a	n/a

Table 7 Discussion (Surveys)

n/a
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Activities Completed

No significant activities were required.
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